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ABSTRACT

This overview of the use of educational resources in teacher education discusses the concept of an educational resource as a reserve source of supply or support, and outlines a simple category system to describe the various types of educaticnal resources: print, non-print, electronic/mechanical, management, intact, and human. The primary focus is on the use of resources in preservice and inservice teacher education and discussion is based on information from four sources: a national study by Joyce and others on preservice education, a comprehensive study of inservice education by Yarger and others, a field test of the Teacher Centers Program, and a content analysis of teacher center proposals. The framework for looking at the use of resources in preservice and inservice teacher education includes consideration of the manner and level of importance in which resources are viewed, an assessment of the availability of resources, and an estimate of how frequently resources are used. An analysis of the status of resources in teacher education addresses two questions which emerge from data presented in the paper--why resources are inadequately integrated at all levels of education, and why resources with a more limited range of applications are used more extensively than those with greater potential. Some implications for future program development are indicated. (RAO)

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THE STATUS OF RESOURCES IN TEACHER EDUCATION

by

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INTRODUCTION

It is difficult to converse with a practicing teacher about classroom instruction without encountering statements about the lack of resources, the availability of wonderful, new resources, or the declaration that the classroom could be a marvelous place if only this or that resource were available. Interestingly, it is not difficult to be puzzled by the meaning of the term "resource." Asking classroom teachers to list examples of what they consider to be resources provides little clarification. Rather, one encounters long lists with almost unbelievable diversity. To some, scissors, crayons, and paste are resources; to others, the supportive attitude of their principal is viewed as a resource. The list goes on. What becomes increasingly clear is that the concept of an educational resource has not been well developed, and is thus less than helpful in understanding how resources are used in either classrooms or in teacher education. The primary purposes of this paper are to explore the concept of educational resources, to investigate their use both in elementary and secondary classrooms and in teacher education, and to address some critical questions concerning the better use of resources, especially in teacher education.

Educational Resource Defined

If there is a common contemporary notion underlying the use of the term educational resource, it is that resources are anything that can be used as an educational tool, ranging from pencil and paper through styrofoam and tri-wall to computers and human beings with unique skills. As one can see, this is not a very restrictive concept, and therefore has not been very useful.

For purposes of this paper, an educational resource will be defined as a reserve (non-regular) source of supply or support. This notion can be thought of in comparison to the standard "tools of the trade" that do not constitute a reserve, but rather, are taken for granted by education personnel in the performance of duties associated with their role.

There is probably no better way to test the usefulness of a concept than to put it to use. The following examples are intended not only to test the usefulness of the concept of "resource," but also to offer

exemplars that will provide a clear understanding. In fact, examples will be presented that transcend education in an effort to better understand the notion of resource, and to provide a means for isolating the limitations that might exist.

If the reader can remember the last trip that was made to the physician, a mental picture of the equipment available to the physician can be constructed. One would consider all of the things regularly found in a doctor's office as the tools of the trade. Thus, a stethoscope, thermometer, gauze and bandages, and the examining rooms are standard equipment, and should not be thought of as resources. These constitute the "black" part of a black and white distinction.

The white part of that distinction is also quite easy to envision. For the modern physician, a body scanner would be a resource. It is a new piece of medical equipment, and is available only in the most modern and sophisticated medical centers. In fact, many patients travel to the United States from foreign lands in order to have access to this medical marvel. The criteria for a resource are clearly met--a body scanner is a "non-regular" reserve source of supply or support.

There are, however, grey areas as well. Most readers will have had the occasion at some time in their life to travel from their physician's office to a distant laboratory in order to submit to a variety of laboratory tests. In this case, we have a professional tool that is beyond the scope of the doctor's office. The question then that is raised, is whether or not the availability of laboratory tests for patients should be considered a resource or a non-resource, i.e., a standard tool of the trade? To answer this question, one must focus on the fact that the laboratory tests are a "reserve" that the physician can use. They are not medical aids that are used automatically and/or routinely by physicians. Thus, in this instance, laboratory tests would be considered a resource.

Perhaps another example can make that point more clearly. Few casual observers are aware of the great diversity of equipment that can be installed in aircraft to aid a pilot in safely operating the equipment. For example, one would be hard pressed to find any type of aircraft without an altimeter. For any pilot, an altimeter is a standard piece of equipment. The plane cannot operate without it. However, an on-board computer is a rare and expensive piece of equipment. Thus, the computer is a resource to

the pilot. The aircraft can fly without it, so it should not be considered a baseline tool. Rather, it is a reserve source of support that can be used when necessary or desired. It is important to point out that certain aircraft (i.e., commercial jetliners) have on-board computers as a matter of routine. They are not, however, necessary for the operation of the aircraft. Thus, even for the 747 pilot, the on-board computer is a resource.

One can now apply the concept of a resource to the field of education. For any practicing teacher, there are certain supports that are considered basic necessities for performing the tasks associated with the job. Thus, a classroom would be considered a basic necessity for a teacher, as would such objects as desks, chairs, chalkboards, paper, pencils, and so on. Using the concept the way it has been presented in this paper, none of these would be considered resources. In twentieth century American schools, there are probably other elements that should be considered basic necessities. For example, a school principal is a human being who most would agree is necessary for the school to operate, and thus for the teacher to be able to perform his/her duties. School principals, then, are not resources. Children are typically placed together in school by virtue of their age, and to a lesser degree, their social skills and history of prior learning. Thus, the "plan" to group students by grade would not be a resource, but probably a necessity.

What then should be considered resources for American schools? The 16 millimeter movie projector and the slide projector are both pieces of equipment that are typically available in schools, but are not typically necessary for a teacher to have in order to perform the basic tasks of teaching school. Thus they constitute a reserve, and could be considered resources. People can also be resources, as long as they are not part of the most basic types of personnel commonly found in schools. For example, the elementary school counselor can be a valuable resource to a teacher, particularly a teacher who has trouble understanding the behavior of a child. However, the school and the classroom could function even if the counselor were not available. Thus, the counselor is not a necessary part of the minimal school environment, but rather is a human resource available to both teachers and students. Even money can be a resource. Once the basic bills are paid that are necessary to keep the school minimally

operational, any money that is used in any type of discretionary sense would be considered a resource.

Summary

Simply stated, anything that is not a necessity for the practice of education at any level would be considered a resource. Sometimes resources are new, and eventually become necessities, e.g., a new set of basal readers may initially be seen as a resource, but soon become so integral to the operation of a classroom that they are considered a basic tool of the trade. At other times, a resource can be quite commonly available, but used as a "reserve source," e.g., a cassette tape recorder. In the latter instance, they do not become a basic necessity.

The concept of a resource has been presented in a simplified form in order to point out the basic distinction between a resource and a non-resource. Although probably helpful, this concept has distinct limitations concerning its helpfulness in understanding, and more importantly, improving the practice of education. The remainder of this paper will build on this concept, and work toward a more thorough, complete, and powerful understanding of educational resources.

THE CLASSIFICATION OF RESOURCES

While the first part of this paper was devoted to developing the concept of an educational resource, this section will deal with the qualitative aspects. In order to perform this task, it seems logical to attempt to impose a structure on different kinds of resources in a way that will facilitate communication. Because of the almost infinite number of possible resources, it is unlikely that a highly precise and all-inclusive order can be established. Rather, the most helpful approach to developing a precise "language of resources" is most likely the development of a category system. The focus of this category system will be a very general approach to resources in education.

Print resources. These are educational resources that are constructed by the use of a printing process, and consist of either verbal or visual symbols on paper. Print resources are indiscriminate in terms of length, format, or content. Examples of print resources include handouts, pamphlets, books, and monographs.

Non-print resources. These educational resources are constructed to transmit either visual, verbal, or auditory symbols that are in other than print form. Like print resources, non-print resources are indiscriminate in terms of length, format, or content. Examples include audio or videotape, film, photographs, and transparencies.

Electronic/mechanical resources. These types of resources are those that can be used to facilitate the use of or fabricate print or non-print resources, or can be used directly as a medium of teaching and learning. They are mechanical in nature, and are typically referred to as "hardware." Examples of mechanical resources include projectors, video equipment, tape recorders, calculators, and computers.

Management resources. These resources are mental constructions that may or may not require the use of other resources, and are designed to improve, facilitate, or make more efficient an educational endeavor.

Examples of management resources include grouping plans, observational schemes, taxonomies, and specific teaching strategies. Although the product of human minds, management resources are characterized by not being embedded within a human being.

Intact resources. This type of resource is flexible in nature, and consists of a variety of commodities not typically thought of as an educational resource, but that can be used as a currency of exchange for, or medium for the improvement, facilitation, and/or implementation of an educational endeavor. Examples of intact resources include time, money, and space.

Human resources. Probably the most complex of the educational resources are those that are embedded in the skills of a human being. The skills embedded in human resources take no particular form, but this type of resource is usually accessed through the use of a consultant, a collegial relationship, the exposure to an expert, or a variety of other human interactions.

This system should be considered a simple category system with a hierarchical flavor. It is not a pure hierarchy because each category does not subsume the category(ies) that precedes it. Rather, it is a system that has been designed to describe educational resources in a manner that will make communication about them easier and more precise.

The Range of Application of Resources

Although not a pure hierarchy, the category system presented above does have a flow related to the variety of applications a type of resource may possess. This "flow" augurs for the maintenance of the order in which they are presented. Succinctly, as one moves from print upward toward human resources, the range of applications tends to move from narrow to broad. Thus, a management, intact, or human resource appears to have a broader range of potential applications than does a print, non-print, or electronic/mechanical resource. This relationship between resource and range of applications is graphically presented in Figure 1. For example, although a book (print resource), or a film (non-print resource) can be

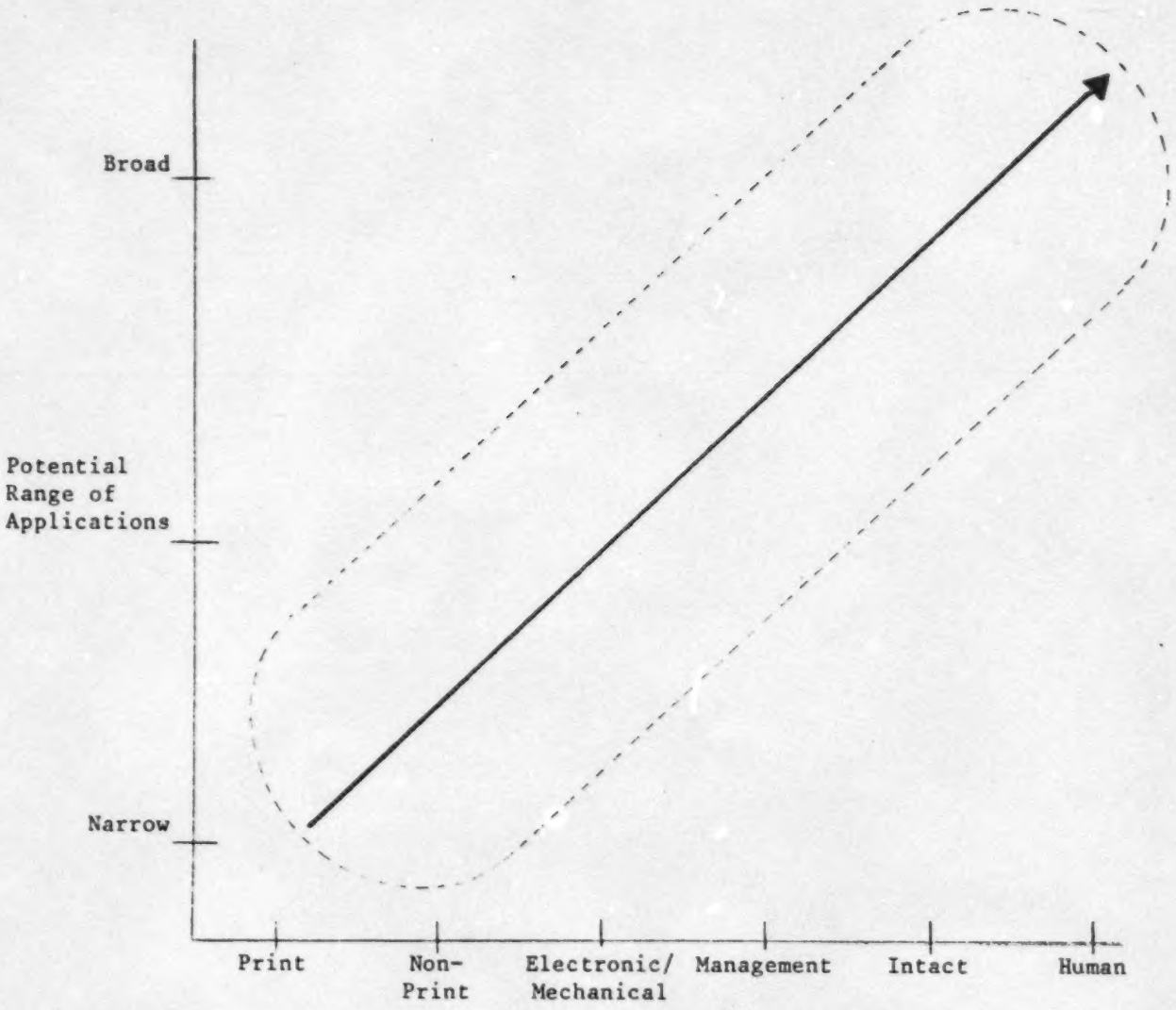

Figure 1

An Estimate of the Relationship of the Range of Applications and the Types of Educational Resources

used in a variety of ways as an instructional resource, there are distinct limitations. A book can only be read, and a film can only be viewed. It is true that a creative teacher can do many things subsequent to the reading or the viewing, and to that extent, the range of applications is broader than a single possibility. However, money (intact resource), or an art specialist (human resource) can be used in an almost infinite number of ways to enhance the instructional program in a classroom. Thus, the range of applications is much broader.

It appears that the relationship presented in Figure 1 suggests that "higher level" resources, though they may be more powerful and helpful in educational activities, may also be more difficult to identify and to understand. This probably occurs because anticipated use is determined prior to the solicitation of the resource. Thus, when the teacher obtains the $25, he/she may have already decided that the money will be used to buy library books. It would probably be more challenging if the teacher were aware of the availability of a resource, and had to create and make judgments about diverse ways in which that resource could be used. This, perhaps, speaks to the structure of schools and to the way resources are conceptualized and used, an issue that will be addressed later in this paper.

Summary

Thus far this paper has presented a conceptualization of an educational resource, and has provided a category system for qualitatively understanding resources. Obviously, it makes sense to integrate the two concepts, thus making it possible to talk about print resources, human resources, and others. It is also possible to talk about the basic necessities of instruction that may be of the print, non-print, or other variety.

With this level of understanding about educational resources, it is appropriate to selectively peruse the literature in order to develop a better understanding of how resources are used in elementary/secondary education, as well as teacher education.

THE USE OF RESOURCES

It is almost impossible to explore the use of resources in teacher education without exploring their use in teaching. However, the use of resources in classrooms by elementary and secondary teachers is a topic far too broad for the scope of this paper. In order to establish the focus for this paper, it is helpful to address the paradigm presented in Figure 2.

As can easily be noted, the use of resources in the instruction of children is a primary role of elementary and secondary teachers. Teachers also have the responsibility of providing resources to children that will help them learn independently.

The role of the teacher educator, on the other hand, is to either use materials in working directly with teachers in teacher education programs, or to aid teachers in the more efficient use of materials designed for children. In recent years, probably due to the emerging popularity of teacher centers, teachers themselves appear to be assuming a teacher education role. Evidence of this can be found by visiting teacher centers and observing teachers helping other teachers, often in the area of facilitating a teacher's use of new or different materials with children.

The purpose of presenting this paradigm is to help establish the focus for this paper. Although a brief foray into the area of resource use in elementary and secondary classrooms will be taken, the primary focus will be on the use of resources in teacher education. This will include an in-depth look at the use of resources in preservice teacher education, followed by an exploration of the use of resources in inservice education. Special attention will be paid to the role of resources in teacher centers.

Resources in Elementary and Secondary Education

The definition provided for resources in this paper has not commonly been used in research. Thus, one must "read between the lines" and make judgments concerning the applicability of research to the use of resources in elementary and secondary education. In general, the limited research in this area focuses on the use of materials--typically of the print and non-print variety. Thus, unless otherwise stated, one can accept that the data presented here do not focus on electronic/mechanical, management, intact, or human resources. The data do, however, provide information that will allow for judgments that will be helpful in later sections of this paper.

USES		USERS	
		Teachers	Teacher Educators
	To help children learn directly	Preeminent Role	N/A
	To help children learn independently	Facilitative Role	N/A
	To help teachers learn directly	N/A	Preeminent Role
	To help teachers learn independently	Emerging Role (Teacher Centers)	Facilitative Role

Figure 2

A Paradigm for Understanding the Use of Resources in Education

The data used to provide a glimpse of the use of resources in elementary and secondary schools were drawn from one study and a comprehensive review of the literature related to materials use in classrooms. The study, performed by the Educational Products Information Exchange Institute (EPIE) in 1977, was entitled "A Study of the Nature and Quality of the Instructional Materials Most Used by Teachers and Learners." The literature review, performed by G. Yarger and Mintz (1977) was entitled "A Literature Study Related to the Use of Materials in the Classroom."

Data for the EPIE study were gathered between 1974 and 1976. Succinctly, 29,000 teachers were contacted and provided questionnaires that focused on their involvement with materials in their instructional roles. Slightly over 12,000 responded to the survey, representing all grade levels, K-12. A summary of the important findings from that study included--

- The use of print and non-print materials typically consumes the majority of time in K-12 classrooms.
- School districts expend approximately one percent of their budget to purchase materials.
- Slightly less than half of the classroom teachers responding to the survey stated that they had little or no role in choosing the materials that they are required to use.
- Little if any training is provided to help teachers use materials effectively.
- Those teachers who are involved in the selection of materials for school districts spend very little time at the task.
- Teachers are not provided with training or other strategies that would allow them to evaluate or select materials appropriately.
- Non-print materials constitute about 1/3 of the materials used in elementary and secondary classrooms, yet teachers are unable to identify materials other than 16mm films that have recently been used.
- Very few teachers address the problem of the "goodness of fit" between their teaching styles, the materials that they are using, and the abilities of their students.

Interestingly, the EPIE study did not focus on teacher-made resources--a raison d'être for the newly-emerging teacher center movement. Rather, the study focused on the use of basal and supplementary texts, films, tapes, transparencies, dittos, and other such print and non-print materials. In fact, although there is no way to be sure, one gets the distinct impression that educational researchers have a very constricted view of resources.

Regardless, certain impressions are very important in the consideration of enhancing the use of resources in classrooms. First, one gets the impression that if all resources were stripped from teachers, they would have little knowledge about how to interact with their students; i.e., "things" are used by teachers the vast majority of the time in their instruction of children. Second, and this does extend beyond the information provided, there is a vague impression that teachers are not terribly selective or critical of the materials that are available for them to use. When one considers the fact that many elementary teachers must work with small groups of children while "involving" the bulk of the class, that impression is not surprising.

Thus, two implications for the enhanced use of resources in elementary and secondary classrooms seem clear. First, there is a distinct need to conceptualize and better understand the nature of resources, their intended use with children, and their efficacy. This need is underscored when one considers the dependence of teachers on a variety of commodities to aid them in their instructional tasks. Second, teachers appear to need help in learning how to use resources that may be available to them. The knowledge that teachers are dependent on resources, and that the need exists for training programs to help them evaluate and use learning aids appropriately, certainly underscores the need for a more thorough approach to understanding and promoting the use of resources in classrooms.

The G. Yarger and Mintz study took a different approach. They identified and analyzed 26 different studies that in one way or another dealt with the use of resources (i.e., materials) in elementary and secondary classrooms. Again, the studies reviewed by G. Yarger and Mintz focused on print and non-print resources.

The studies were categorized into four different areas, including the materials used in the classroom, the influence of materials on

instructional content, the influence of materials on teachers' decisions about instruction, and how materials influence student learning. These researchers arrived at several interesting conclusions and translated those conclusions into implications that can be useful for future research and for program development. Among the most important of their findings were--

- Even though the selection of materials for classroom use is crucial, it has neither been a topic of serious inquiry, nor has it been a problem that has been squarely addressed by the educational community, especially teachers. This is particularly important when one considers that teachers and children devote the bulk of their time to working with materials, and when one considers the multitude of materials that are available for use.
- Within the resources continuum, they discovered that not only do teachers rely heavily on the use of printed materials, but that these materials tend to influence in very important ways the instructional content of the classroom.
- There appear to be teacher personality and/or cognitive variables suggesting that teachers instruct differently with the same materials, and that they select and use supplemental materials differently.
- In a less than direct way, it appears that materials may well have an effect on student achievement.
- Finally, by nearly any dimension, there is a paucity of and need for teacher training in not only the selection and evaluation of materials, but also in the variety of alternatives in the way that they are used.

G. Yarger and Mintz, consistent with the EPIE study, underscore the importance of resources in the classroom (mostly print materials), the pervasiveness of their use, and the lack of training for teachers to deal with materials in an efficient way. Additionally, their analysis highlights the tremendous variety of resources that are available for teachers to use. Although these two studies did not deal directly with resources as defined in this paper, the implications that can be drawn from them would be equally or more important for anyone attempting to enhance

the use of resources in elementary and secondary classrooms. It would be safe to say that resources are available, but that more are needed. Further, it is safe to assume that once resources are available they will be used, and, finally, that a great deal of training needs to occur in order for materials to be selected, evaluated, constructed, and used appropriately.

Finally, one important point needs to be made. The fact that the cited research focuses on print and non-print resources does not mean that other resources are not available and used in classrooms. Rather, it means that electronic/mechanical, management, intact, and human resources as such, have not been the target of serious study. For example, in the domain of electronic/mechanical resources, there are closets full of machines as common as tape recorders and as sophisticated as Language Masters. "Teacher-proof" curricula are and have been available for many years. Flexible scheduling, open space schools, and team teaching have been used in a variety of situations. Finally, human resources such as teacher aides have been and are currently available to teachers.

Context for Exploring the Use of Resources in Teacher Education

Teacher education is a multi-faceted if not many-splendored endeavor. Broadly speaking, the field is thought of in terms of either preservice or inservice teacher education. Preservice teacher education is defined as that period of training prior to the procurement of the initial teaching certificate or license. Typically, this takes place within the context of an undergraduate degree program.

Inservice education is somewhat more difficult to understand, and has profited or suffered from many different definitions. This writer prefers to take a rather broad perspective, leaning on Hass who offers the following short definition: "Broadly conceived, inservice education includes all activities engaged in by the professional personnel during their service and designed to contribute to improvement on the job" (1957, p. 13). Although at first reading this definition appears to be very broad, it does nonetheless provide some useful constraints. It includes all categories of professional personnel, but only embraces those who are actively employed. Likewise, all types of inservice activity are covered, but only if they are intended to "contribute to improvement on the job."

Within the broad parameters of inservice education, one can consider teacher centers. Teacher centers have variously been thought of as a delivery mechanism, a concept, a place, an ideology, and probably other things as well. For purposes of this paper, teacher centers will be considered a rather specialized subset of inservice education, generally focusing on classroom teachers, and providing programs that are directly linked to the improvement of classroom practice. Teacher centers have been defined as "...a place, in situ, or a changing location, which develops programs directed at the improvement of classroom instruction in which the participating personnel have an opportunity to share successes, to utilize a wide range of educational resources, and to receive training specifically related to their most pressing instructional problems" (Schmieder and Yarger, 1974, p. 6). Throughout the remainder of this paper, teacher centers will be dealt with as a part of inservice education. Where appropriate, special roles and characteristics associated with teacher centers will be specified.

The next two sections of this paper (resources in preservice and inservice education) will be based primarily on information from four sources, though bits and pieces will be taken from other sources as well. First, data taken from a national study of preservice education (Joyce, Yarger, Howey, Harbeck, and Kluwin, 1977) will be used, followed by data from a comprehensive survey of inservice education (Yarger, Howey, and Joyce, 1980). Additionally, information will be used that was gathered in a field test in preparation for an ongoing research project that now exists with the federally funded Teacher Centers Program (Yarger and Mertens, 1979). Finally, information that resulted from a content analysis of over 400 proposals submitted for the first competition for teacher centers will be used (Yarger and Mertens, 1980). Although none of these studies focused exclusively, or even primarily, on the use of resources in teacher education, in each instance data about resources were gathered. Thus, although learning about the state of the scene of resources in teacher education will be data based, it will also be necessary to reflect on these data, and go beyond the information given.

The framework for looking at the use of resources in preservice and inservice teacher education will focus on an attempt to understand the perspective of the field, i.e., the manner and level of importance in which

resources are viewed. This will be followed by an assessment of the availability of resources, and finally with an estimate of how frequently resources are used. Subsequently, an analysis will be made of all of the information presented in this paper, and implications for future program development will be highlighted.

Resources in Preservice Teacher Education

It is important and necessary to foray into the world of the use of resources in preservice education, because it is the program graduates in this area that, in fact, become candidates for inservice teacher education. Thus, one can expect that the common history of preservice students influences the range of expectations, and the range of resources that they are exposed to and have expertise in using. This is particularly the case when one considers that recent research has demonstrated that preservice teacher education programs tend to be standardized throughout the country (Yarger and Joyce, 1977). Additionally, an increasing number of programs are being developed where preservice teachers and inservice teachers receive the same training. This would certainly be the case in teacher education programs designed to enhance the use of resources in classrooms, as this is not likely to be part of the standardized preservice teacher training curriculum. Thus, as the twig is bent, so grows the tree. An understanding of the perspective toward, availability, and use of resources in preservice teacher education will lead to a better understanding of the inservice domain.

Perspective. It is difficult to discern a perspective among preservice teacher educators concerning the use of and training for the use of resources in their programs. Probably the best source of "avant garde" thought would come from a perusal of the literature on competency based teacher education (CBTE). This is the case because of the supposedly high demands on new resources in order to develop and implement these programs.

Clearly, the language of CBTE is far more pervasive than is the implementation, at least that level of implementation which requires the use of resources. Most of the teacher educators surveyed in the study spoke of their involvement at one level or another in the development and implementation of CBTE programs, yet when queried concerning how these programs were implemented, it became apparent that it was old wine in new

linguistic bottles (Joyce et al., 1977, pp. 138-147). It would appear that teacher educators have learned to talk the language of CBTE, but they have not learned how to play the game in terms of program development and implementation. Competency based teacher education purports to demand such innovations as student tracking systems, individualized instructional modules, flexible use of time, and increased use of mechanical resources. The rhetoric in model program descriptions is replete with these talismans. This type of preservice program should, in fact, place heavy demands on the use of all types of resources, particularly those of the electronic/mechanical, management, and intact variety. But, according to professors who teach in such programs, the most common mode of operation has been the development of print, and in a few cases, non-print resources. In fact, one gets the distinct impression that teacher educators perhaps have been forced to talk the language of a CBTE, but never really wanted to play the game.

This point has perhaps been made more understandable by an analysis of preservice teacher education that pinpointed its extreme labor intensiveness (Yarger and Joyce, 1977). Preservice teacher educators seem to exude an aura of "helping," and thus focus heavily on the interpersonal contacts they have with their students. Although this does not preclude a progressive perspective toward the development, use, and training in the area of resources, it certainly does not augur well for their inclusion. Thus, one would probably select the term "limited," or even "primitive," to describe the perspective held by preservice teacher educators toward the use of a full spectrum of resources in their program.

Availability. If, in fact, the assessment presented above concerning the perspective of preservice teacher educators toward resources is accurate, one would not expect to find an abundance of resources available in preservice programs. Although the data are practically nil, there is little to suggest that such an analysis is, in fact, incorrect. As will be seen in the next section of this paper, the data that do exist on the use of resources are fairly consistent with the best estimate of the availability of resources. In fact, conversations with teacher educators leads one to believe that those resources that are used are obtained through personal and individual effort, rather than being available by virtue of the program.

If one looks closely at the content of preservice training programs, it becomes apparent that little if any training is provided concerning the development, selection or use of resources. There may or may not be a course in the use of audiovisual equipment. Occasionally one finds a limited resource center where preservice students can go and utilize such equipment as primary typewriters, ditto machines, photo copiers, and in some cases laminating machines. Beyond that, there is little to observe that leads one to believe that the availability of a wide range of resources is evident. Again, it should be stressed that when resources are used, they are likely being used because the individual teacher educator has put forth the effort necessary to obtain them.

Use of resources. As one might expect from the preceding paragraphs, the use of resources in preservice teacher education can be characterized as "unextensive." In queries of both preservice teacher educators and preservice teacher education students (Joyce et al., 1977, p. 61) it became clear that the resources that are used tend to be of the print and non-print varieties, with some use of simple management resources (taxonomies of objectives, observational schemes), and a few electronic/mechanical resources (e.g., audio and videotape equipment). There is some fugitive evidence that teacher educators do create some of their own print resources (e.g., dittos), and, on some occasions, management resources transmitted via print (e.g.,exercises,observational schemes).* The foci, however, of the preservice teacher education program tends to be a combination of rather standardized class attendance, individual consultation, and classroom observation.

When both students and teacher educators were queried concerning the medium for communication in the evaluation of student teaching, the results were not surprising. Clearly, the standard currency of exchange for the evaluation of student teaching is the time-honored observation (Joyce et al., 1977, p. 10). Although this experience is ripe for the use of a variety of resources, one finds little to suggest the use of either

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* Fugitive evidence in this case refers to flyers, advertisements and brochures circulated by a variety of preservice teacher education programs.

electronic/mechanical, management, or intact resources. Rather, the mode is probably for the supervisor to observe the preservice teacher in an instructional setting, and to participate in a conference afterwards. Occasionally, observational instruments will be used in order to provide more accurate feedback. This, however, tends not to be the norm. Finally, preservice students report that they frequently use resources in order to prepare themselves and to prepare materials for their student teaching assignment (Joyce et al., 1977, p. 56). However, this tends to happpen serendipitously, and usually is not part of the preservice training program. In fact, where this does occur, it usually can be more closely related to the ambiance of the participating school or to the classroom teacher, than to any programmatic aspect of their training.

Summary. It appears that instructional resources are not integral aspects of preservice teacher education. The perspective in the field tends to be limited, the availability constrained, and the use "unextensive." Rather, teacher educators appear to have a perspective toward their task that requires a great deal of interpersonal communication and personal involvement. Thus, preservice teacher education can be characterized as labor intensive, particularly when thought of in relation to a characterization of resource intensive. Even in the domain of competency based teacher education, an endeavor that offers fruitful grounds for the use of resources, preservice teacher education appears to be much more involved with the language than with the practice. Finally, those familiar with the field of preservice teacher education will usually state quite clearly that there is a natural (and in some cases they will state legitimate) resistance to the use of resources in their endeavor. Rather, they tend to view their students as neophytes in need of a great deal of interpersonal contact and support. Further, these teacher educators tend to view the use of resources as inhibiting to this perceived need for interpersonal contact and support. Perhaps the day will come when pre-service teacher educators can view resources as commodities that will free them for more focused individual help, but that day has not yet arrived.

The Use of Resources in Inservice Teacher Education

In general, there are more data available concerning the use of resources in inservice education. Additionally, as a matter of general theme, one gets the distinct impression that inservice teacher education is more advanced in its recognition of, training for, and use of resources. One is not led to believe that the integration of resources into the inservice endeavor is spectacular, only that there appears to be more sensitivity to and awareness of the importance of resources in the training of experienced professionals. Clearly, there is a great deal of room for creativity and improvement.

In this section, teacher centers will be considered a part of inservice teacher education, except where it makes sense to treat them individually. Remember, teacher centers can best be thought of as a label which denotes one aspect of inservice teacher education. Although fuzzy at best, the notion of a teacher center does bring to the fore certain images that will warrant specification as perspective, availability, and use of resources are explored.

Perspective. There can be no doubt that both teachers and teacher educators view resources as important in inservice activities (Yarger and Mertens, 1979, 1980). This is particularly the case within teacher centers. What is less than clear, however, is whether or not resources are viewed as an integral part of program development in inservice education. Rather, one suspects that teachers and teacher educators alike want resources available to them, particularly in teacher centers, but for the most part view them as commodities to be used primarily with children rather than with adults. Thus, if one views inservice education as the provision of resources for teachers to plan and develop programs for children, then resources are probably quite well integrated. If, however, one views the former as materials provision for instruction, and views inservice as a distinct and separate endeavor where programs are planned for teachers, then the perspective concerning resources is murky.

In order to better understand how resources are viewed in teacher centers, one can turn to the analysis of 407 teacher center proposals. Over half of the proposals claim that development of materials and curriculum development (both of which need resources) were central to their programs. In fact, in listing their purposes, materials and

curriculum development ranked second and fifth, respectively, out of eleven possible options (Yarger and Mertens, In Press--1980). The proposals were, however, not at all precise in specifying how the training would occur where these resources were to be used.

Interestingly, these same proposals specified quite frequently some creative ideas concerning the use of intact resources. There were many ideas concerning the use of space that transcend what one normally finds in schools. Additionally, many of the proposals specified creative use of in-school time for professional development activities.

When the budgets of these proposals were analyzed, the importance of print, non-print, and electronic/mechanical resources was evident (Yarger and Mertens, In Press--1980). The budgets were replete with long lists of a variety of different kinds of resources. In some cases, in fact, the acquisition of resources constituted a major portion of the budget. Tracing these requests backward into the proposal, however, a very different picture emerged. In few instances was there any information concerning how resources were to be used in professional development programming. Thus, one gets the impression that those working in teacher centers are sensitive to the need for resources, but less than thoughtful about how they can be used to best advantage in teacher training programs. In fact, one suspects that many of the resources that are listed are for use with children in classrooms rather than for use with teachers in inservice programs. Regardless, there were many suggestions of services for matching materials with teachers, for advisories to help teachers develop materials, for use of video and audio tape equipment, for mini grants designed to help teachers develop materials, and for a variety of other ideas as well. Clearly, if nothing more, the importance of resources has been recognized.

Data from the inservice study (Yarger et al., In Press--1980) are both more limited and more vague on this topic. The use of resources in inservice education was not a prime area of inquiry, thus one must interpret to obtain an impression. The impression obtained suggests that inservice teachers in general view the activity to be much more related to the solving of pressing instructional problems, and focus to a great extent on having access to an expert consultant in the classroom (typically thought of as being another teacher). The extent to which the use of

resources could be helpful in solving instructional problems is the likely extent to which they would be used. There is little in these data to suggest that inservice teachers view learning about resources, learning how to evaluate resources, or learning how to use resources in the classroom, as a pressing issue in itself. Thus, it would appear that the use of resources is viewed as secondary to the primary problems of the improvement of instruction.

In terms of an overall perspective, the best that can be said is that there appears to be a vague recognition of the need for resources in inservice education, but little understanding of how to go about selecting, evaluating, and using resources appropriately as a training device. This probably suggests a readiness on the part of those involved in inservice education to more seriously consider the problem of resource utilization, and, in fact, teacher centers may be initiating a movement to fill this void. However, in order to do so, it appears likely that the problem will have to be encountered from a "practical use" point of view, or it will fall on deaf ears. In other words, if one wants to enhance the thinking about and use of resources in inservice education, one must address the problem from the point of view of the classroom teacher and the needs expressed by that teacher.

Availability of resources. Historically, most have thought of inservice education as classes convened either on a college campus, or at some site in a school district. Rarely has anyone thought of physical space designed exclusively for the facilitation of inservice activities. Teacher centers personnel appear to have changed their way of thinking about this topic, viewing space as an important resource to be used. In fact, in well over half of the proposals that were analyzed, a separate space was claimed for the program (Yarger and Mertens, 1980). Typically, the space was to be devoted for use as a professional and/or curriculum library, a materials or curriculum development center, or as an equipment center. Occasionally, it was proposed that such creative technologies as computers be used in these sites.

In operation, many teacher centers, and other inservice programs as well, demonstrate the use of electronic/mechanical resources in the inservice activity. The most frequently used electronic/mechanical resources consisted of laminators, photo copiers, ditto machines, and

typewriters (Yarger and Mertens, 1979, p. 81). Interestingly, many of these electronic/mechanical resources were not acquired through a typical requisition via institutional budget, but rather were acquired in ad hoc and informal ways. This is a result of the fact that little money (another resource) is typically available for inservice programs.

The resources described in the preceding paragraphs are usually seen as free floating in nature, available for teachers and teacher educators to use for whatever purpose they determine. There is little evidence to suggest that the use of resources is planned in the development of more traditional inservice activities (i.e., courses, workshops, seminars). An interesting phenomenon is occurring where traditional delivery mechanisms for inservice are seen as discrete from resource abundant environments where teachers and teacher educators are free to select, choose, and utilize commodities in a variety of undetermined ways. Probably the most common resources for traditional activities are print and non-print materials consisting of books, dittoed handouts, and films.

Teacher centers appear to be sensitive to the need for utilizing human resources as well. In the study of eight teacher centers conducted in the spring of 1979, financial support was devoted to securing human resources, usually as part of a matching teacher with resource program, as a leader in materials development activities, or as a more generalized consultant (Yarger and Mertens, 1979, p. 75). In some cases, however, the "expertness" of the human resource is unclear. In fact, in some cases, the services provided by the resource may be such mundane things as the delivery of materials to classrooms. In this case, one would suspect that some type of basic professional need is being served by the human resource, rather than using the resource to provide for teachers new and unique experiences that have previously been unavailable.

Following the theme that teacher centers appear to rely heavily on variable resources, the data show that money itself is a commonly used resource (Yarger and Mertens, 1979, p. 83). Typically, through mechanisms such as mini grant awards, teachers are given small amounts of money (e.g., $50 to $100) for use in their own professional development program. It often is not clear how these monies are used, but one suspects that at least on some occasions they are used to buy commercial materials for use with children in schools. Again, the specter of whether or not the

resources are actually part of an inservice education or staff development program is raised.

The sensitivity to the need for resources was underscored in the larger study of inservice education. Approximately half of the responding teachers made it a point to specify that they were required to pay for many of the materials used in their inservice activities (Yarger et al., In Press--1980). Conversations with teachers suggest that these materials typically were of the print variety, though in some cases they were raw materials to be used in learning about materials and curriculum development. Regardless, the data do suggest an awareness of and desire for a variety of different types of resources in inservice activities. Interestingly, it is unclear whether the impetus for this awareness comes from the clients of the inservice activities, or from those charged with the responsibility for developing programs. It is suspected that the vague interest in and desire for association with a variety of resources comes from the teachers themselves. This would suggest the need for training for inservice program developers in an effort to allow them to be more expert in their thinking about the use of resources in their profession.

It would appear that teacher centers may be forging some new ground in the use of resources in teacher education. This appears to be particularly the case in the use of human and intact resources such as space, time, and money. Within the larger domain of inservice education, it appears that print and non-print resources are most prevalent, though there is some suggestion that the clients of inservice education desire more interaction with a variety of resources. The clear suspicion that emerges from an analysis of these data is that although more resources may be available now than has historically been the case, the availability still is quite limited. A great deal of the data concerning the availability of resources comes from a small study of federally funded projects. There can be no doubt that the availability of federal funding has led to the increased availability of resources in these cases. Clearly, it is evident that the "typical" teacher in the classroom does not have access to many resources, though one suspects that if they were available, they would be well received.

The use of resources. If a growing perspective and an emerging availability of resources exist, then one would assume that resources are

being used in inservice teacher education. In actuality, it is difficult to know. The data are limited, as this is not a topic that is normally investigated in studies. There is no paucity of speculative perceptions, but data-bound answers are limited indeed. Nonetheless, some information is available.

In teacher center activities documented during the field test in the spring of 1979, slightly less than 15 percent of the participant hours generated were in content areas that are directly related to the use of resources, i.e., materials development, equipment use, curriculum development (Yarger and Mertens, 1979, p. 66). These data do not allow one to understand whether the materials were a medium of instruction or a product to be constructed. However, another analysis of some related data suggests that about an equal percentage of the participant hours appeared to use resources in some discernible sense as a method of instructing teachers (Yarger and Mertens, 1979, p. 67). This typically consisted of the use of management resources such as observational schemes, and the use of both common and more exotic electronic/mechanical resources ranging from projectors to computers.

When teachers in the inservice study were queried concerning their exposure to innovation in inservice education, they reported a very limited exposure (Yarger et al., In Press--1980). If one assumes that there is a relationship between exposure to innovation in inservice programs and the use of resources, then one would suspect a rather limited exposure to resources. Furthermore, if the use of resources is in any way related to the introduction of innovation in schooling and in inservice education, then these data would suggest that inservice education maintains a rather "status quo" approach.

The teachers in the inservice study also overwhelmingly reported that they use such resources as video equipment less than once per year to analyze their teaching (Yarger et al., In Press--1980). Although one cannot generalize from this particular bit of information, it clearly is an example of non-utilization of a well known and not too inaccessible resource. In fact, one might suspect that equipment such as video cameras and recorders is far more available than its usage would indicate. This, of course, suggests a need for training in the use of resources, a need which has pervaded all analyses to this point.

The data examined thus far have focused on resources other than those of the print and non-print variety. Suffice it to note that there certainly is use of these resources in inservice programs. However, in every sense, the use of resources appears to be limited. In fact, there is little to suggest the pervasive use of resources, except perhaps in the domain of preparing materials for children. Teacher centers, however, seem to be emerging as a more resource oriented activity, particularly in the area of intact, electronic/mechanical, and human resources.

One certainly can develop the impression that there is a great deal of confusion in whether inservice resources are to be used for programming for practicing professionals, or whether it is legitimate to use them in instructional activities with children and still consider the use of these materials as a staff development tool. More research is needed in order to sort out the use of resources in inservice programs, and to develop conceptualizations of the use of these materials that will allow educators to communicate more clearly.

Summary

It appears that there is a basic and minimal use of resources in inservice education, with more creative innovative uses emerging in the teacher centers, at least at a simple level. This can probably best be viewed as an inroad for program developers who wish to enhance the use of resources. Obviously, there is much to be done in the training of teacher trainers for the concept of resource utilization to be integrated into program planning and implementation.

Of those resources that do appear to be used, intact resources and, to some extent, human resources appear to be most prevalent. There is little evidence of management and electronic/mechanical resources being used, and the entire area of non-print resources needs further study before any type of reasoned estimate can be made.

Clearly, the best estimate of the use of resources in teacher education is one of a conservative, though perhaps emerging, recognition of the importance of resources. One would assume that those resources with the broadest range of usage would, in fact, be used most prevalently (i.e., electronic/mechanical, management, intact, and human resources). That appears not to be the case. In fact, the opposite appears to be the norm--

print and non-print materials are much more pervasive in their availability and use in teacher education. One, then, must raise the question of why this is the case. Why are those resources that have a broader range of applications used so much less frequently than those with a narrow range? That question will be explored in the next section of this paper.

THE STATUS OF RESOURCES--AN ANALYSIS

Thus far, the purpose of this paper has been to develop the concept of an educational resource as a "reserve (non-regular) source of supply or support." This notion was presented in contrast to educational supports that could be defined as "tools of the trade"--baseline requisites for the existence of educational programs. Subsequently, a simple category system for resources was presented, suggesting that resources could be viewed in one of the six following areas: print, non-print, electronic/mechanical, management, intact, or human. The intent of the category system is to allow for more precise communication and analysis concerning the status of resources in the field. Finally, the concept of the range of applications of resources was presented, suggesting that lower order print and non-print resources were used much more extensively than were management, intact, and human resources, even though the latter varieties had a much wider range of potential application.

An examination was made of the perspective toward, availability, and use of resources in elementary and secondary, and preservice and inservice teacher education. Succinctly, in all areas, the notion of the use of resources seems quite unconceptualized. People don't think in terms of assessing resources and fitting them into instructional needs. Rather, professionals tend to bypass that step and focus on searching for direct solutions to instructional problems. Thus, although resources are used, they are probably not used as efficiently as they might be, and their use often tends to occur serendipitously. In some areas of inservice teacher education, that perspective may be harsh, as more recognition of the importance of resources appears to be emerging, especially in the fledgling teacher center movement.

Although one could easily determine that the availability of resources in education is quite limited, an equally strong argument could be made that there are more resources available than are appropriately used. Regardless, there are clearly more print resources available than any other single type, though non-print resources are not lacking. Certainly, some management resources are used, but one suspects that nearly all of them are transmitted via print. In most areas of education,

there is an impression that more electronic/mechanical resources are available than are used. Finally, there is little to indicate that educators at any level have conceptualized the notions of intact and human resources sufficiently to expect them to be intelligently used, except on an ad hoc basis.

Within the perspective of this paper, one would have to take the position that the use of resources in education is, indeed, quite limited. In elementary and secondary schools, print resources predominate, with non-print resources being used to some degree. Although management and electronic/mechanical resources are clearly available, little data concerning their use could be found. Preservice teacher education also limits itself to the use of print, non-print, and some print-transmitted management resources. Electronic/mechanical resources appear to be significantly under-used, with little or no regard given to either intact or human resources, except in a secondary manner, and then only occasionally. Within the inservice domain, particularly in teacher centers, an emerging recognition of the importance of resources is evident. Although there may be little sophistication associated with this recognition, it does present a toehold for those interested in the development of resources in education.

All in all, it appears that education at all levels is a labor-intensive activity. Interpersonal contact between student and teacher probably constitutes the single most important concern, even though there are data to suggest that a great deal of a student's time is, in fact, spent with educational supports that are non-human. There can be little doubt that until educators begin to look more seriously at the issue of resources, only minor progress can be expected.

From all of the data that have been presented thus far, two questions emerge as most important. These two questions will form the basis for the analysis that follows--

- Why are resources so inadequately integrated at all levels of education?
- Why are resources that have a more limited range of applications used so much more extensively than those with greater potential?

Although answers to the above questions obviously share many common points, for purposes of clarity they will be treated independently.

Understanding the Inadequate Integration of Resources

One of the primary reasons for the inadequate integration of resources into educational activities is the lack of preparation that educators possess concerning the understanding of, selection of, and use of resources. Simply stated, teachers and teacher educators do not think about resources, at least in any systematic way. One reason for this is that the topic of resources has not been in the past, nor is it currently, part of the traditional curriculum for classroom-oriented educators at any level. The focus in nearly all educational training programs has been on the interaction between student and teacher. To the extent this emphasis has existed, it has probably negatively influenced the integration of resource development and usage into training curricula. Although this reason may sound almost too simple, it may also be one of the most important reasons why resources are so poorly integrated into educational endeavors.

Conversations with teachers will also provide a picture of what might be called perceptions of scarcity. Although no one probably has a clear understanding of the level of availability of a variety of resources for educators to use, it appears as though educators view resources as very scarce. Availability and accessibility are very different concepts, and probably deserve a higher level of understanding. Regardless, in many cases where resources are inaccessible, they are probably viewed as unavailable. The distinction is important, because to solve the problems of inaccessibility, it would take very different, and probably less expensive measures, than to solve the problems of availability. Even though there probably is a scarcity of many resources, there certainly are perceptions of scarcity for most resources within the instructional ranks.

Finally, to have a thorough understanding of the inadequate integration of resources, one would have to develop an understanding of the operational environment of schools and classrooms. Picture an elementary classroom with a sophisticated control panel for a variety of audio instructional resources located in the front, along with a master computer that serves the twelve terminals in the room. Additionally, if there were

built-in screens, movie projectors, overhead projectors, and videotape equipment, you would have an operational environment that begged for the integration of resources. Suppose further that the principal and staff of the school kept an abundant flow of software and other materials coming into the classroom that meshed with the operational environment. A best guess is that after a period of time, even the most naive teacher would begin to use resources more extensively, and probably more proficiently.

However, the operational environment described above does not typify many classrooms in America. And, it should be noted that the operational environment included not only the resources in the classroom, but the continual flow of software and ancillary goods that would encourage their use. Finally, this type of operational environment would include a subtle "press" to become involved with resources that certainly does not exist in many, if any, educational environments.

Rather, both the physical and mental operational environments of most educational settings are resource meager. This is partially due to the economic condition of education, and to the lack of training that leads to very limited expectations concerning the use of resources. By nearly any analysis, operational environments of educational settings are quite standardized, quite structured, with a consistent and narrowly defined set of expectations about what will occur within that environment. In one sense, this may explain the lack of integration of educational resources into instructional settings.

Assuming that the lack of preparation of educators, the perceptions of scarity, and the meager operational environments of instructional settings help one to understand the reasons for the inadequate integration of resources, some questions still remain unanswered.

The Reliance on Common Resources

It was pointed out earlier in this paper that as one goes from print resources through the category system to human resources, the range of applications becomes much broader. At the same time, an analysis of the literature strongly suggests that while the range of applications becomes broader, the actual use becomes much more limited. Thus, one must be concerned about why resources that have a much broader range of application are used much less frequently. And, why there is such a heavy reliance on print, and to some extent non-print resources.

Closely linked to the knowledge of the operational environment presented above is the notion of a lack of "press" to use resources in schools. If any single notion has evolved concerning the use of resources in educational settings, it is focused on labor and time saving dimensions of resources, not necessarily on the improvement of the endeavor. One can expect that the use of "higher order" resources may, in fact, be more difficult, and require more work on the part of the user. If resources are seen as labor saving devices, then one can understand why resources that are not labor saving devices are not used. In conjunction with that, there appears to be little in the organization of schools that encourages teachers and administrators to invest more energy in an effort to improve their activity. Rather, with the tight financial conditions that exist in schools today, with the emergence of the teacher organizations to bargain for better working conditions, and perhaps with the detachment suggested by Lortie (1975) in his recent sociological analysis of schools, one can develop an understanding of the lack of press for the improvement of instruction.

Going a little further, one can then look at the print and non-print resources that are used, and see that in many cases they are, in fact, used as labor saving devices and as time fillers, rather than as aids for the improvement of instruction. Workbooks, dittos, readers, and other print materials are frequently used to engage students in activities that will free the teacher for a variety of tasks, not the least of which is working with a small group of students. Films, all too frequently, are used for much the same purpose. It is even possible to have teachers comment on the value of these types of resources, citing their labor saving rather than their educational aspects.

Another reason for the reliance on lower order resources can be found in the concept of accessibility. Assuming a higher level of availability than is used, more complex resources certainly require more effort to access. In other words, it is easier to duplicate a ditto from a commercial publication than it is to figure out how to use a nationally renowned poet in the classroom. This, of course, is directly related to the need for training. Thus, many resources are not accessible to educators because they have not had the training or experience to use them appropriately.

Obviously, other types of accessibility issues are important as well. For example, the film library kept at the central office is ofttimes so complex to use that it is viewed as inaccessible. If an educator must plan four months in advance and order films to be shown at a specific time, then it is entirely probable that the educator will take the position that the resources are available but too difficult to access. Regardless, access related to both knowledge of how to use and to ease of obtaining are problems that most likely relate to the heavy reliance on print and non-print resources.

Summary

It appears that resources are inadequately integrated and print and non-print resources are heavily relied upon for a variety of reasons. Educators are not stewed in the juices of resources and their use. Too often, resources are perceived to be unavailable. Educational environments are typically not geared up for the integration of resources, and there is a lack of press to use sophisticated resources that are likely to require more effort. Finally, resources are often difficult to access, either because the educator does not know how, or because the bureaucracy that allocates resources is overly complex. Whatever the reasons, an understanding of them certainly has implications for the future.

IMPLICATIONS FOR THE FUTURE

If one sets as a goal the improved use of resources in education, then implications for the future seem almost obvious--we need more research and we need more training. Within those two areas, however, the data and analyses presented in this paper should offer more specific direction.

In the research domain, it seems obvious that we need some baseline information if we are to move ahead intelligently. Thus, a series of descriptive studies would be appropriate. This would allow educators to better understand which resources are available and which are not; which resources are used and which are not; which resources are under-used, and which are used to the limits of their availability. Further, if the baseline data needs were well thought out, at the conclusion of this series of studies one would be better able to paint a picture of the use of resources in education. It is a picture that sorely needs to be painted.

Beyond that, there are other areas that could profit from research on resources. The data presented in this paper suggest a need for interactive research. Questions such as which materials work better with which children under what circumstances need to be explored. Additionally, data were presented which suggest that teachers have different personality characteristics that may interact with materials in such a way that the teacher and teaching style should be used in selecting materials. It is important to understand that there are a host of variables, i.e., children, task to be accomplished, instructional setting, teacher style, and others, that need to be considered, and that would profit from an interactive research approach.

Finally, there is probably sufficient knowledge about certain types of resources, particularly print and non-print materials, to suggest that the field could profit from experimental studies. Although, logically, experimental studies would be considered toward the end of the range that is being suggested, the field of education is not so parsimoniously simple. Thus, the problems of how we could improve on present practice can certainly be profitably explored with our present state of knowledge.

In the training area, we need programs that would help educators develop a better understanding of resources and their best possible uses.

Specifically, one could advocate developing programs that would help educators select, match materials with students and tasks, implement and use materials appropriately, and finally evaluate them and their effect on student learning. Although the jury is still out on some dimensions of all of these areas, it has become clear to this writer that a great deal more is known than is currently being used. All of these "known areas" could be used in the development of training programs for educational practitioners.

Hopefully, spinoff effects would occur as well. For example, as educators become better versed in the nature and uses of resources, it is entirely possible that it would become evident that the appropriate use of resources could and should lead to freedom for more, not less, personal contact in their endeavor. Although some resources may be more difficult to plan for and use, a general rule of thumb would probably suggest that if resources were intelligently used, teachers at all levels could spend more time with students and interact with them on a more personal level. The need for this activity is apparent at all levels of education, and is frequently cited as a reason for not becoming more involved with complex resources.

Certainly, there are other implications for the improvement of the use of resources in education. One could develop positions in the area of cost effectiveness, cost benefit, increased efficacy, and providing education with the capability to go further in complex content areas. None of these positions will be developed here. Suffice it to note that the entire concept of the use of resources in education is, in a sense, a sleeping giant waiting to be awakened. The biggest single problem that is faced focuses on how one taps a giant on the shoulder.

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